

Applicant : Huan-Cheng Chang et al.
Serial N : 10/034,459
Filed : December 28, 2001
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Attorney Docket: 08919-075001 / 07A-900806

REMARKS

The applicants acknowledge the examiner's indication that claims 3, 14, and 19-20 would be allowable if rewritten into independent form. The other claims should also be allowable for the reasons set forth below.

Claims 1, 10, and 15

The Examiner rejected claims 1, 10, and 15 under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,300,772 issued to Buttrill, Jr., and by US Pat No 5,696,376 issued to Doroshendo et al.

As discussed in the telephone interview dated February 10, 2004, we submit that neither Buttrill nor Doroshenko discloses or suggests "a first end-cap electrode, a second end-cap electrode, and a ring electrode ... to confine a charged particle from an ion source within a confinement region when an audio frequency voltage is applied between the ring electrode and the first end-cap electrode and second end-cap electrode at a first amplitude, and to eject the charged particle from the ion trap when the amplitude of the audio frequency voltage is increased to a second amplitude" (emphasis added), as recited in claim 1.

Buttrill discloses using an RF (radio frequency) trapping generator 16 on the order of 1.05 MHz (col. 4, lines 57-58), and Doroshenko discloses applying a radio frequency (RF) trapping voltage V (about 1.1 MHz) on the ring electrode (col. 10, lines 12-15). Neither reference discloses or suggests applying an audio frequency voltage between the ring electrode and the end-cap electrodes.

Claims 2-9, 10-14, and 15-24 are patentable for at least the same reasons as claim 1.

Claim 27

The Examiner rejected claim 27 under 35 U.S.C. 103(a) as being unpatentable over Doroshenko. As discussed in the telephone interview, we submit that the features of claim 27, "introducing a charged particle into an ion trap of a mass spectrometer ... applying an AC voltage having a frequency of f and an amplitude of V_{ac} ... measuring a secular frequency ω ... increasing the amplitude of the AC voltage to a second amplitude V_{eject} ...; and calculating a

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calibration parameter q_{eject} based on V_{ac} , V_{eject} , f , and ω , the calibration parameter being used to calculate a mass-to-charge ratio of another charged particle that is introduced into the ion trap and ejected from the ion trap," would not have been obvious in view of Doroshenko.

While Doroshenko mentions a calibration constant (col. 13, lines 35-45), Doroshenko does not disclose or suggest how the calibration constant is calculated, nor what parameters affect the calibration constant.

Claims 28-29 are patentable for at least the same reasons as claim 27.

We respectfully request the allowance of all pending claims, including claims 1-24 and 27-29. Please apply any charges or credits to deposit account 06-1050, referencing attorney docket 08919-075001.

Respectfully submitted,

Date: Feb. 11, 2004

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Expires: May 16, 2004



Harry I. Moatz
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